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Midland Witch Hazels.

BY J. A. NIEUWLAND.

Rafinesque had described various species of Witch Hazels as segregates from *Hamamelis virginiana* Linn., but none of these are now accepted by American botanists at large, as having sufficiently distinctive or constant characters to warrant recognition. All or nearly all were described from the southern or southeastern United States, and concerning their validity we need not concern ourselves here, as none are to be looked for within the region embraced by this article. Their descriptive diagnosis has been made sufficiently plain and Rafinesque's original article may be consulted by such as wish to study them critically.[1] Walter[2] published several species and Pursh[3] one, which all met the same fate as those of Rafinesque. Pursh even advanced the opinion that the northern common Witch Hazel was specifically different from the southern one. The only other species admitted by botanists generally beside *H. virginiana* Linn. are the oriental *H. japonica* Sieb. & Zucc,[4] also *H. verna* Sarg. which blooms in spring.

The type of the genus came from Virginia whence Mitchell[5] first indicated the plant as typical of a new genus, though it had been known long before. He pointed out in criticism of the Genera Plantarum of Linnaeus of 1737, that a number of generic types

1 Rafinesque, C. S. New Fl. Am. III, pp. 16 and 17, (1836).

2 Walter, T., Fl. Car. p. 255. (1788).

3 Pursh, F. Fl. Am. Sept. I, p. 116 (1814).

4 Siebold, P., and Zuccarini, J. Abh. Akad. Muench. IV, II, p. 193, (1843).

5 Mitchell, J., Act. Ac. Leop. Carol. VIII, pp. 187, 224, also Mitchel. J. Dissert brevis de Prin. Bot. App. Norimb. 1769.

had been omitted from that work. Among these was his genus *Trilopus* called by Linnaeus *Hamamelis*, the latter name having been used by older botanists, and even the ancients for a vacciniaceous, or pomaceous plant. Linnaeus had in other cases caused confusion by assuming old classical names for newly discovered genera, as for example in case of *Itea*, *Ptelea*, *Dodocatheon*, etc.

Linnaeus was quite aware of Mitchell's work by correspondence, but before the latter had succeeded in having this article printed, Linnaeus[6] had himself taken up most of these genera giving them names of his own. Moreover, there seemed to have been a questionable motive in "setting back" the date of some of his publications, apparently to make it appear that he had not gotten his information from Mitchell, so that the actual date of the Act. Ups. from title at least was not "1741" but 1746. Mitchell himself dated his observations "Dabam ex aedibus meis Virginiae 11, 3, 1741," so that the reprint of 1769 seems a further protest against the apparently unjust procedure of Linnaeus. The relative priority of all the names in question is discussed individually by Kuntze.[7] *Hamamelis* was then first published in Linnaeus' Genera Plantarum where it was attributed to Gronovius' Flora Virginica. The name however, is not to be found in the latter work part I, and part II appeared only in 1743. The following is the synonymy:

HAMAMELIS Linn. Gen. Pl. Ed. 2, p. 54, (1742).
Trilopus Mitchell Ac. Acad. Leop. Carol. VIII, app. 211, (1748), also (1769), l. c.
Hamamelis Linn. Gen. P. Ed. 5 p. 59, (1754). Sp. Pl. p. 124, (1753).

HAMAMELIS VIRGINIANA Linn. Sp. Pl. p. 124, (1753).
Hamamelis corylifolia Moench, Meth. p. 274, (1794).
Hamamelis virginica Linn., Syst. Ed. XII, p. 129, (1767).
Trilopus virginicus Raf., New Fl. Am. III, p. 15.
Trilopus riparius Raf. l. c.
Hamamelis riparia Raf. l. c.
Tr. or *H.hyemalis* Raf. l. c.
Rafinesque having attempted to make segregates extensively

6 Linnaeus, C. Act. Ups. "Annum 1741" (1746).

7 Kuntze, O., Revisio Generum Plantarum pt. II, p. 519, (1891).

from the species, has perhaps described what may be considered as the type in perhaps the most characteristic manner of any botanist, short though his diagnosis may be. We may quote the description in full: "510. Tr. or H. Virginica Raf. med. fl. tab. 45. Leaves ovate and obovate obtuse repand, base obliquely cordate, smooth; flowers sessile clustered by 3 to 5, calyx and fruit pubescent—the name of *Tr.* or *H. riparia* or *hyemalis*, would have been better, since it only grows on the margins of the streams from New England to Carolina. It is in bloom in December and January, even when the snow is on the ground, and the fruit is ripe in the spring. Branches punctate." In the Medical Flora he says that the fruit takes a year to mature. We have usually found ripe fruit with flowers. We should say that the leaves are membranous or at least thin, though Rafinesque seems to infer that they are coriaceous. He continues[8] in reference to the change of name already discussed: "This is a very singular genus, formed by Linnaeus with the *Trilopus* of Mitchell, which name he ought not to have changed for the actual, which is the Greek name of the *Mespilus* or *Medlar tree*."

Hamamelis virginiana var. **angustifolia** nov. var.

Frutex circa 2 m. altus sero in autumno florescens foliis adhuc praesentibus. Ramuli fusco vel atro-fuscato colore: folia glabra, grosse dentata, vel undulata, tenuia, venosa, apice acuto vel plerumque etiam acuminata, basi inaequali, cordata saltem in altero latere. Folia in ramulis sterilibus generatim ovata vel ovato-lanceolata; lamina 6–12 cm. longa, 3–6 cm. lata aliquando sparse pilis brevibus albis inferiore facie pubescens. Petala 4 circa 1.5 cm. longa et minus quam .5 mm. lata. Flores sessiles 3–4 in ramulorum summitate aggregati. Bracteae et sepala dense tomentulosa. Sepala viridia. Fructum non inveni.

This plant is easily recognized by its very narrow leaves compared with the type. The petals are lemon yellow, long and very narrow about one half as narrow usually as those of *H. virginiana*. The shrub shows less tendency to branch, the twigs are long and wiry, the petioles slender and comparatively long (1.5–2 cm.). The leaves are scarcely as thin as in the type, and present on blooming branches whereas in the species they have invariably

8 Rafinesque, C. S. Med. Flora. Vol. I. p. 228, (1828).

fallen off. I select as type No. 10431 of my herbarium, found myself Oct. 17, 1912, one mile north of Hudson Lake (Laporte Co.), Ind., a short distance in a Tamarack-White Pine bog. The swamp formerly contained an abundance of *Pinus Strobus* Linn., which has since disappeared almost completely by the woodman's ax. Though the plant possesses a number of good characters that led me at first glance in its native habitat to recognize it as very different from the other Witch Hazels of our region, I refrain from publishing it as a species not having studied it in all its seasonal changes, nor having found any trace whatever of fruit.

Hamamelis virginiana var. **orbiculata** var. nov.

Frutex cum ramis atro-cinereis glabris nisi in summitate et ibi tomentulosis. Folia orbiculata, firma, vel subcoriacea, parva, 1.5–5 cm. longa, (saepe latiora quam longa, maxima nunquam longiora quam 5 cm.) apice obtuso vel rotundato, basi cordata plus minusve inaequali; margine dentato vel eroso-undulato vel crenato; folia subtus dense tomentulosa ferrugineis pilis, vel glabra, in superficie aliquando pubescentia, Petioli 1 cm. haud excedentes, crassi, tomentulosi.

This plant differs from the preceding in shape and texture of the leaves very strikingly. The habit of the plant with its smooth gray branches and short internodes and numerous flowers is noticeable at first glance. The buds are pubescent and the outer bracts short, giving them the appearance of a minute acorn. The shape of the leaves is very constant and notable, the apex scarcely larger than a marginal tooth and often undefined. The teeth are small. The plant called *H. rotundifolia* Raf. or *H. macrophylla* of the south could not be mistaken for it owing to the larger leaves of the southern plant, whether the latter be recognized ever as either species or variety. The leaves of the southern plant are described as 3–4 inches long.

The type of *H. virginiana* var. *orbiculata* was found in the dune region of Lake Michigan at Tamarack about 7 or 8 miles west of Michigan City, Ind., on Sept. 22, 1910, and is No. 719 of my herbarium. The flowers were not as yet in bloom and the plant perhaps deserves specific rank owing to its striking vegetative characters alone.

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Nesting Habits of Our Birds.

BY BROTHER ALPHONSUS, C. S. C.

Song Sparrow.
Melospiza cinerea melodia.

This bird is sometimes called the Ground Sparrow, from its habit of building its nest on the ground. Sometimes the bird will place its nest in a bunch of lilies, without resting it on the ground. The eggs are whitish with brown spots. This species has two broods, the second being fledged about the middle of July. A Song Sparrow's nest is easily approached. The parting of the tall grass near the nest will not frighten the old bird.

Flicker.
Colaptes auratus.

This interesting bird is sometimes called the High-hole, from its habit of building its nest in a hole high up in a tree. The adjective *high*, however, is frequently inapplicable, for the bird often selects holes that are low down. A very curious instance of the Flicker's variation in choosing its nesting-place came under my observation. The walls of a large ice-house were bored in many places and the birds entered and built in the ice-house.

Crested Flycatcher.
Myiarchus crinitus.

This handsome flycatcher builds its nest in large holes in trees. The only nests I have ever found were in apple trees. The young are fledged about the middle of July; and while in the nest, the old birds may be seen perched on a branch near by, waiting for a passing insect. When one appears the bird will dart after it; and if successful in catching it, the bird will take the insect to feed it to the young birds.

Orchard Oriole.
Icterus spurius.

The Orchard Oriole's nest is very finely made of grasses, and is usually hid away in the foliage of maples, elms or ash trees. Often the only way to locate a nest is to watch the old birds carrying food to their young. Even then there is little likelihood that

the observer may see anything more than the exterior of the nest, for it is generally attacked to the slender outer branches of the trees. I once found a nest in a young ash, and saw the eggs, which were white and marked irregularly with black streaks.

CHIPPING SPARROW.
Spizella socialis

The chipping Sparrow is sometimes called the Hair Bird, from its habit of lining its nest with horse hair. The nest is always placed in shrubs or low evergreens, and so may be easily observed. I have found many abandoned nests containing two or three blue eggs, and have wondered what caused the birds to leave these nests. One of the sweetest sights in bird-life is four little "Chippies" in the nest, sitting two behind two, and all facing in the same direction. Put your finger near them and four little mouths will open for food.

FIELD SPARROW.
Spizella pusilla.

The Field Sparrow builds its nest of a bunch of grass lying on the ground, which is oval in shape with a large opening at one end. The young may be seen, soon after being hatched, only featherless and shapeless forms. A nest may be discovered by watching the actions of the old birds, which well manifest concern on the approach of an observer. Retire a little and wait for the bird to fly with food for its young, and then you will know the location of the nest.

PURPLE MARTIN.
Progne subis.

The Purple Martins choose church towers or boxes made for them as nesting-places. Sometimes wire-netting is put over the open spaces of towers to prevent birds from entering them. When this device to keep the birds out is resorted to, the Martins will leave the vicinity—perhaps for good. Their eggs are pure white, and there are two broods. When the second brood is fledged—towards the end of July—the Martins begin to flock in great numbers.

CATBIRD.
Dumetella carolinensis.

Shrubbery is always chosen by the Catbird as the situation for its nest. Sometimes the same clump of bushes will have a

nesting Catbird year after year. Does the same pair ever return again and again to one place? Who will answer this question? The eggs are somewhat smaller than, and of a similar color to, those of the robin—bluish. The young birds appear in June and are fledged before July. The Catbird is comparatively quiet whenever any one approaches its nest.

BROWN THRASHER.
Toxostoma rufum.

The Thrasher's nest is built as often on the ground as it is in hedges or bushes. The bird may be easily observed while sitting on its speckled eggs, which are large and never more than four in number. The nesting-season is in May and June, the bird being in song until the young are fledged. This species suffers more than any other of our song birds from bird-fanciers, who esteem it as our most gifted singer.

WHITE-BREASTED NUTHATCH.
Sitta carolinensis.

Holes in trees are chosen by the Nuthatch as its nesting-place. May is the month in which the young are fledged. Previous to the appearance of the brood, the old birds are not much in evidence. Unless a nest is located by the observer, he may think they have migrated in order to rear their young; for this species sometimes disappears for many days.

CHICKADEE.
Penthestes atricapillus.

The Chickadee is a bird of the deep woods, seldom visiting smaller woods or groves. A trip to the country in spring would likely afford one the pleasure of finding a nesting Chickadee. When the bird is found, watch it for a while and you will soon discover the nest. Probably a cavity in a rotting fence-post will be used for the purpose. If you can see into this cavity, you will find many eggs or young birds, for the Chickadee always has a large family.

BLUEBIRD.
Sialia sialis.

Few birds are more interesting during the nesting-season than the beautiful Bluebird. Like the House Wren, the Bluebird always builds in a cavity. I once saw a pipe standing end-wise

in some soft marl, and in the pipe I found a nest. Observing the pipe later, I saw some Bluebirds resting on its edge. Unfortunately, the pipe was removed, and the birds had to build elsewhere. There are two broods; the first being fledged in June and the second, in July. After the nesting-season the Bluebirds wander about and may be seen very seldom.

HOUSE WREN.
Troglodytes aedon.

The nesting habits of the House Wren are very interesting. Although boxes are made for the bird both in city and country to attract the Wrens, still they are not partial to the pretty bird-houses, but will often select any cavity in fence posts or stumps. Some very curious locations of Wren's nests have been found. An unused vest hung in a room with windows always open was chosen by one individual. Walking in a wood one day, a friend of mine saw a Wren fly out of the skull of a heifer, and on looking closely at the skull, a nest was discovered. There are two broods, the last being fledged late in July.

The Generic Name of the White Pine.

BY J. A. NIEUWLAND.

When discussing the occurrence of the White Pine in our region under the heading, "Notes on Our Local Plants,"[1] we have had some hesitancy in regard to not accepting the plant as a member of a genus separate from *Pinus*. Moreover, we were persuaded the name *Strobus* of Pliny could scarcely have been the same plant, as that typified by *Pinus Strobus* Linn. nor even *Pinus excelsa* Wall. of the Himalayan Mountains, nor in fact, any plant closely related to either of these. It was therefore indicated as doubtful whether the name could in any degree of accuracy be used for a group of plants containing the American White Pine. The tree was accordingly left provisionally in the genus Pinus.

There are, however, very good reasons indeed for considering *Pinus Strobus* as separate from the other pines as was shown by

1 Am. Mid. Nat. Vol. II. p. 283.

Small[2] in his Flora of the Southeastern United States. The generic name *Strobus* accepted by that author is objectionable not only for the reason shown above, but it is a homonym to *Strobon* Raf.,[3] and apparently neuter gender form of a noun of similar appearance, and certainly more like *Strobus* than the *Galearis* he objects to resembles *Galearia*.[4] Historical priority being the rule followed in the "Notes" this problem did not really concern us, yet it is worth while to point out that even assuming 1753 as the "starting point" for botanical nomenclature, *Strobus* is still inadmissable as a generic name for the White Pines.

We were also aware that *Apinus* Necker[5] demanded consideration, but a curious confusion presents itself here for which at first we were unwilling to suggest a solution or propose a definite opinion. Necker seems to have proposed the name *Apinus* for the "group" containing *Pinus Cembra* Linn. and *Pinus Pinea* Linn. *Pinus Strobus* Linn. itself is by him actually put under *Larix*[6] and therefore positively excluded from *Apinus*. Under these circumstances we can scarcely see how *Pinus Strobus* could be put in a genus from which the very author thereof himself deliberately excludes it, whatever there be in description that might perhaps allow it therein. Since therefore *Strobus* is a homonym there seems nothing to do, if the White Pines are a valid genus, but suggest a new name for them, and we propose **Leucopitys** The word comes from the Greek λευκός, white, and πίτυς, pine. A description of the generic characters is scarcely necessary after considering those given by Small.[7] Following is the synonymy of the two most characteristic species.

Leucopitys Nwd. Nom. nov.

Strobus Opiz, Lotos, IV, p. 94 (1854), not *Strobon* Rafinesque. Sylv. Tell. p. 132 (1838).
Not *Apinus* Necker, El. Bot. III, p. 269 (1790).
Pinus Linn., Sp. Pl. p. 1000, (1753); Gen. Pl. p. 293, (1737); p. 434, (1754); Systema Nat. (1735) in part.
Larix Necker El. Bot. III, pp. 268, 270, (1790) in part.

2 Small, J. K. Fl. S. E. U. S. p. 29, (1903).
3 Rafinesque, C. S. Sylva Tellur. p. 132 (1838).
4 See also Am. Mid. Nat. Vol. II. p. 305.
5 Necker, J. El. Bot. Vol. III., pp. 269, 270, (1790).
6 l. c. p. 270. 7 l. c.

Leucopitys Strobus (Linn.) Nwd.

Strobus weymouthiana Opiz. l. c.

Strobus Strobus (Linn.) Small. Fl. S. E. U. S., p. 29, (1903).

Pinus Strobus Linn. Sp. Pl. p. 1001, (1753).

It may be mentioned in this connection that this plant was found in St. Joseph Co., Ind., near Lydick, in a tamarack swamp. Only one speciman was found but this was certainly not a cultivation. The plant is No. 10568 of the U. N. D. Herbarium. It is an immature though healthy one. This reference was overlooked in the "Notes" and is the most easterly locality for the plant we have been able to record for the region.

Leucopitys excelsa (Wall) Nwd.

Pinus excelsa Wall. ex Lamb. Pin. Ed. II., I, p. 40, t. 26.

Strobus excelsa (Wall)?

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Our Birds in the Summer of 1912.

BY BROTHER ALPHONSUS, C. S. C.

After May 20, certain species, although common summer residents, were seldom seen. The explanation of their scarcity would seem to be that these species are found only in peculiar localities during summer, and the few that were seen after May 20, were straggling migrants. This would not cover of the case of the Killdeer, Cedarbird and Yellow-throated Vireo. The rarity of the Killdeer was doubtless due to the early nesting of this species. The Cedarbird is a wanderer, and so may frequently be absent from a given locality. The scarcity of the Yellow-throated Vireo—only three records of the species having been made during the summer—is inexplicable to the writer.

The absence, after May 20, of the Purple Finch, Dickcissel, Rose-breasted Grosbeak, Maryland Yellowthroat and Cardinal may be accounted for variously. The Purple Finch and Dickcissel were not recorded once during spring or summer. The Rose-breasted Grosbeak was not found on any day in summer. The

Cardinal was heard only twice during summer—early in August. The most unusal case was that of the Maryland Yellow-throat, the first record being made on July 19. These observations show that in some seasons certain species are entirely absent from, or very rare in, a given locality.

The absence in June of the Yellow-throated and Red-eyed Vireos and the Phoebe was likely due to the fact that these species are not partial to parts that are inhabited, as nesting-places. Some years a grove may have a nesting Red-eye, and then a season will occur when no one of the species can be found in the locality. The same is true of the Phoebe, whose nest is often placed under overhanging rocks; and sometimes so slanting is the posi-t on selected that the nest will fall and a new one must be built. An experience of this kind will cause the bird to choose a different locality next year.

Only one record was made of the Bluebird in June. If a nest is not found, the observer may fail to see this species during the nesting-season; for the bird does not cover a large territory until the young are fledged. The Towhee, Yellow Warbler, Scarlet Tanager and Loggerhead Shrike nest in localities that are far from towns, and are unlikely to be found by any one who does not visit deep woods and out-lying fields.

This summer the scarcity of the Killdeer was notable—three times in June and seven times in July and once in August were the only records made by the writer. Other years this species was as common as the Sandpiper. The writer's observations of the Bobol nk were most meager this summer—only one in June. This month is usually the time when the species is most abundant, but June of 1912 was remarkable for the rarity of the Bobolink.

In July and August, when the song season of certain species ends, it is difficult to find them. Among such birds are the Vesper Sparrow and the Orchard Oriole. Both of these species, late in summer, feed in unfrequented places, making it necessary to travel far if the observer would locate them.

In August a number of species were found but a few times, in the first part of the month. Such were the Bluebird, Meadow-lark, Red-winged Blackbird and Cowbird. The absence of these species for many days indicates a summer migration, which may extend into autumn. After August 20, a great scarcity of many

species was noted, which points to the ending of the summer season.

Birds not seen in May after the 19th: Snowbird, Cardinal, Golden-crowned Kinglet, Ruby-crowned Kinglet, Brown Creeper, Screech Owl, Hell Diver, Purple Finch, Rose-breasted Grosbeak, Black-throated Blue Warbler, Maryland, Yellowthroat, Bobolink, Purple Martin, Black-burnian Warbler, Dickcissel, Black and White Warbler, Bobwhite, Sapsucker, Downy Woodpecker, Shrike, Bittern, Tennessee Warbler, Nashville Warbler, Red-breasted Nuthatch, Chestnut-sided Warbler, Cap May Warbler, Wood Thrush, White-crowned Sparrow, Canadian Warbler.

Birds not seen in June: Cardinal, Hell Diver, Rose-breasted Grosbeak, Maryland Yellowthroat, Redstart, Dickcissel, Alder Flycatcher, Whip-poor-will, Yellow-throated Vireo, Red-eyed Vireo, Phoebe.

Birds not seen in July: Cardinal, Rose-breasted Grosbeak, Bobolink, Dickcissel, Shrike.

Birds not seen in August: Maryland Yellowthroat, Alder Flycatcher, Phoebe, Yellow-throated Vireo, Bittern, Tree Swallow, Long-billed Marsh Wren, Hairy Woodpecker.

May.

Birds seen on the dates after their names:

Crow, 20, 21 ,25, 29, 30.
Blue Jay, 21, 22, 24 to 27, 29. 30, 31.
Robin, 20 to 31.
Bluebird, 26.
Song Sparrow, 20 to 31.
Meadowlark, 20 to 25, 28 to 31.
Purple Grackle, 20 to 31.
Killdeer, 30.
Towhee, 21.
Field Sparrow, 20 to 31.
Vesper Sparrow, 20 to 31.
Red-winged Blackbird, 20, 21, 24, 28, 29.
Mourning Dove, 20 to 31.
Hermit Thrush, 20 to 23, 26 to 29.
Cowbird, 20 to 26, 28 to31.
Kingfisher, 27, 28, 29.
House Wren, 20 to 24, 26 to 31.
Yellow Palm Warbler, 20, 21.
Chimney Swift, 20 to 31.
Yellow Warbler, 20, 21, 22, 24, 25, 26.
Warbling Vireo, 20 to 31.
Baltimore Oriole, 20 to 31.
Indigo Bird, 20. 21, 22, 28, 30.
Catbird, 20 to 31.
Orchard Oriole, 20 to 23, 25, 26, 28 to 31.
Kingbird, 20 to 25, 28 to 31.
Black-throated Green Warbler, 20, 28.
White-breasted Nuthatch, 20, 25

Redstart, 20. 24.
Scarlet Tanager, 25, 26.
Least Flycatcher, 20, 21.
Alder Flycatcher, 20, 21.
Crested Flycatcher, 20 to 31.
Cedarbird, 24, 26.
Yellow-billed Cuckoo, 27 to 31.
Nighthawk, 25, 27, 28 to 31.
Whip-poor-will, 26.
Red-headed Woodpecker, 20 to 31.
Spotted Sandpiper, 20 to 23, 25 to 28, 30.
Myrtle Warbler, 20.
Brown Thrasher, 20 to 23, 25, 26, 28 to 31.
Chipping Sparrow, 20 to 31.
Goldfinch, 20 to 22, 24 to 27, 31.
Flicker, 20, 21, 24, 25, 28, 31.
Black-poll Warbler, 20, 22, 24,25
Yellow-throated Vireo, 23.
Red-eyed Vireo, 20 to 31.
Magnolia Warbler, 20.
Wood Pewee, 20 to 31.
Yellow-throated Warbler, 20, 23.
Bay-breasted Warbler, 22, 23.
Pine Warbler, 20.
Phoebe, 30.

Total number of species seen in May, 53.

JUNE.

Birds seen on the dates after their names:

Crow, 5, 7, 8, 11, 12, 13, 16 to 21, 23, 24, 26, 28, 30.
Blue Jay, 1, 2, 4, 5, 7 to 15, 17 to 21, 23 to 30.
Robin, 1 to 21, 23 to 30.
Bluebird, 24.
Song Sparrow, 1 to 21, 23 to 28, 30.
Meadowlark, 1, 2, 3, 4, 6, 7, 10 to 14, 16 to 19, 21, 23 to 28, 30.
Purple Grackle, 1 to 28, 30.
Killdeer, 15, 21, 30.
Towhee, 2.
Field Sparrow, 2, 4 to 9, 11, 12, 14, 16 to 21, 23 to 29.
Vesper Sparrow, 1, 2, 4 to 19, 21, 23, to 30.
Red-winged Blackbird, 1, 2, 8, 9, 11, 17, 23, 24, 26, 28, 29, 30.
Shreech Owl, 16.
Mourning Dove, 2, 3, 4, 5, 8 to 15, 17 to 30.
Cowbird, 2, 3, 4, 6 to 10, 12 to 15, 17 to 25.
Kingfisher, 2, 14, 15, 20, 26, 28.
House Wren, 1 to 6, 8, 9, 11 to 21, 23 to 30.
Chimney Swift, 1 to 10, 12 to 19, 21 to 30.
Yellow Warbler, 5.
Warbling Vireo, 1 to 6, 8 to 30.
Baltimore Oriole, 1 to 30.
Indigo Bird, 4, 5, 6, 8, 9, 12, 18 to 24, 26, 27, 28, 30.
Catbird, 1, 2, 4 to 21, 23 to 30.
Orchard Oriole, 1 to 12, 14 to 21, 23 to 29.
Kingbird, 1 to 15, 17 to 19, 21, 23, 24, 26, 27, 29.
Scarlet Tanager, 23.
Crested Flycatcher, 5, 6, 9, 18 to 26.

Bobolink, 19.
Cedarbird, 8, 13, 24.
Yellow-billed Cuckoo, 1 to 6, 8, 9, 11, 14, 17, 19, 26, 30.
Nighthawk, 1, 2, 4, 5, 8, 9.
Red-headed Woodpecker, 1 to 6, 8 to 20, 23 to 30.
Spotted Sandpiper, 2, 3, 4, 7 to 13, 15, 18, 20, 23 to 26, 28, 30.
Brown Thrasher, 2 to 19, 21, 23, 24, 25, 27.
Barn Swallow, 11, 23, 28, 30.
Chipping Sparrow, 1, 3, to 30.
Downy Woodpecker, 11, 19, 28.
White-breasted Nuthatch, 13, 16, 18, 21, 23, 24, 26, 27, 28, 30.
Loggerhead Shrike, 6.
Goldfinch, 3, 4, 6 to 9, 14, 15, 16, 18, 19, 30.
Flicker, 1, 2, 3, 5, 6, 7, 9, 12, 13, 16 to 19, 21 to 28, 30.
Wood Pewee, 1 to 30.

Total number of species seen in June, 42.

JULY.

Birds seen on the dates after their names:

Crow, 1, 3, 5, 6, 8, 9, 15, 17, 18 to 21, 23 to 31.
Blue Jay, 1 to 17.
Robin, 1 to 31.
Bluebird, 2, 3, 4, 9, 17, 19 to 22, 25, 27, 30, 31.
Song Sparrow, 1 to 31.
Meadowlark, 1 to 6, 8, 9, 10, 13, 15, 17.
Purple Grackle, 1 to 17, 19, 27, 28, 30.
Killdeer, 8 to 11, 13, 21, 25, 26.
Towhee, 10 ,11, 12, 17, 18, 31.
Field Sparrow, 1 to 4, 6 to 23, 25 to 31.
Vesper Sparrow, 1 to 15, 17 to 31.
Red-winged Blackbird, 1 to 14, 17 to 31.
Mourning Dove, 1 to 6, 8 to 17, 20, 21, 23, 24, 25.
Cowbird, 1 to 6, 8 to 17, 20, 23, 25, 29, 30.
Screech Owl, 26.
Scarlet Tanager, 19, 31.
Alder Flycatcher, 18, 21, 22, 24, 27, 29.
Crested Flycatcher, 2, 4, 8, 10, 12, 13, 16, 30.
Cedarbird, 1, 2, 3, 7, 10, 12, 13, 14, 16.
Yellow-billed Cuckoo, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14.
Nighthawk, 8, 9, 15.
Whip-poor-will, 17 ,18, 19.
Red-headed Woodpecker, 1 to 12, 14 to 19, 21, 23, 24, 27 to 31.
Spotted Sandpiper, 1 to 7, 9, 11, 19, 23, 30.
Brown Thrasher, 2, 3, 4, 5, 9, 10, 15, 16, 27, 30.
Barn Swallow, 2 to 5, 9, 10, 12 to 15, 17 to 21, 23, 26, 27, 28, 30, 31.
Chipping Sparrow, 1 to 31.
Downy Woodpecker, 1 to 4, 8, 12, 17 to 20, 24, 25, 27 to 31.

Kingfisher, 8, 12, 13, 17 to 22, 24, 27, 28, 30.
House Wren, 1 to 17, 21, 25 to 28, 30, 31.
Hell Diver, 19, 30.
Chimney Swift, 1 to 16, 30.
Yellow-Warbler, 20 to 23, 28, 30.
Warbling Vireo, 1 to 14, 16 to 31.
Baltimore Oriole, 1 to 30.
Hummingbird, 8, 15, 16, 17, 22.
Indigo Bird, 1 to 5, 8 to 13, 16, 17, 19 to 22, 24 to 31.
Catbird, 1 to 10, 12 to 31.
Orchard Oriole, 1, 2, 3, 5, 8, 10, 12, 20, 30.
Kingbird, 1 to 5, 8 to 31.
Maryland Yellowthroat, 18, 25, 27.
Purple Martin, 1, 4, 11, 18, 19, 22 to 25.
White-breasted Nuthatch, 1 to 9, 11, 13, 14, 16 to 31.
Goldfinch, 1 to 5, 6 8 to 13, 15 to 22, 24 to 31.
Flicker, 1 to 6, 8 to 31.
Yellow-throated Vireo, 22, 29.
Red-eyed Vireo, 19, 22, 27, 29, 30.
Phoebe, 18 to 27, 29, 30.
Wood Pewee, 1 to 31.
Chickadee, 4, 16, 17, 21 to 24, 27, 30.
Yellowlegs, 17 to 22, 25, 27, 29, 30.
Bobwhite, 17.
Hairy Woodpecker, 17, 20.
Tree Swallow, 18, 19, 21, 22, 25.
Long-billed Marsh Wren, 18.
Bittern, 20.
Loon, 29.
Red-tailed Hawk, 30.

Total number of species seen in July, 58.

AUGUST.

Birds seen on the dates after their names:

Crow, 1, 2, 4, 5, 11, 12, 14, 15, 16, 19.
Blue Jay, 2, 5 to 20.
Robin, 1 to 20.
Bluebird, 1, 2, 5, 11.
Song Sparrow, 1 to 20.
Meadowlark, 1.
Purple Grackle, 1, 2, 4, 6 to 20.
Killdeer, 1.
Cardinal, 1, 5.
Towhee, 1, 3, 12.
Field Sparrow, 1, 3, to 8, 10 to 14, 20.
Vesper Sparrow, 1, 2, 4, 5, 7, 11, 14, 16.
Red-winged Blackbird, 1, 3, 4, 12.
Mourning Dove, 1, 3, 6 to 17, 20.
Cowbird, 9, 12, 13, 15.
Swift, 3, 5 to 10, 12, 13, 14, 18, 19.
Kingfisher, 3 ,5, 7, 9, 13, 14, 16, 20.
House Wren, 1, 3, 5, 6 to 16.
Hell Diver, 1.
Yellow Warbler, 1, 5.

Warbling Vireo, 1 to 10, 12, 20.
Baltimore Oriole, 1, 6 to 20.
Hummingbird, 13.
Indigo Bird, 1, 2, 4 to 9, 12 to 16, 18, 20.
Catbird, 1, 2, 4, 5, 6, 9, 11 to 14, 17, 18, 20.
Orchard Oriole, 15, 19.
Kingbird, 1, 2, 4, 5, 6, 9, 12, 13, 18, 19.
Purple Martin, 8, 9, 12, 17, 18.
Scarlet Tanager, 1.
Loggerhead Shrike, 11.
Crested Flycatcher, 7, 9, 12.
Whip-poor-will, 1.
Red-headed Woodpecker, 1, 2, 4 to 20.
Spotted Sandpiper, 1, 4.
Brown Thrasher, 1, 2, 8, 10, 11, 12, 15, 16, 17, 19.
Barn Swallow, 1, 2, 3, 5 to 9, 19.
Chipping Sparrow, 1 to 13, 15, 16, 17, 19, 20.
Downy Woodpecker, 4, 6, 8, 10 to 13, 16, 20.
White-breasted Nuthatch, 1, 3 to 8, 12, 17, 18, 20.
Goldfinch, 1 to 6, 8 to 20.
Flicker, 1, 2, 6, 7, 9 to 18.
Red-eyed Vireo, 1, 3, 5.
Wood Pewee, 1 to 20.
Chickadee, 1, 4, 14.
Yellowlegs, 1, 3, 4, 9, 13, 17, 20.
Bobwhite, 5.
Red-shouldered Hawk, 1, 13, 14.
Yellow-billed Cuckoo, 1, 5, 7, 11, 12, 13, 15.
Black-crowned Night Heron, 1.
Cedarbird, 15, 16, 17.

Total number of species seen in August, 50.
Total number of species seen during summer, 72.

Seedless Oranges, A Historical Note.

The first record of seedless oranges I have been able to find is in an old work of Ferrarius,[1] a Jesuit priest, and native of Sienna, Italy. He describes in somewhat peculiar and at times bombastic style the citrus fruits observed in the gardens and greenhouses of Italy, as also those he heard of from missionaries and travellers in China, the Philippines and India, where oranges are native. His seedless orange described on p. 381 is a real "navel" orange though the apex of the fruit scarcely shows this. Other "navel" oranges are shown which are not quite seedless. The seedless fruit is described in a paragraph under the heading: "*Aurantium sine semine*" and the fruit is described as having a pleasant flavor.

1 Ferrarius, J. B. Hesperides Sive de Malorum Aureorum Cultura et Usu Romae, (1644).

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